

REMARKS

Applicants have amended the claims to make explicit that which was implicit. These amendments are supported throughout the specification, for example at page 3, paragraph 7 and page 9, paragraph 29. As such, these amendments do not introduce new matter and their entry is respectfully requested.

Applicants appreciate the Examiner's indication that claims 12 and 13 are free of prior art.

Claims 1, 2, 3, 4 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Modrich (U.S. 5,459,039) in view of Wodicka et al. (Nature Biotech. Vol. 15, Dec. 1997).

Applicant respectfully submits that this rejection should be withdrawn for the following reasons.

The present invention is directed to the use of DNA chip technology to scan for and detect mutations (including allelic differences) that span at least 10 different genes. Previous technology to scan for polymorphisms and mutations was restricted to looking at mutations in a single specific gene, and does not teach or suggest how to detect unknown mutations in a population of many genes. Applicant's amendment makes explicit that which was implicit – that the present method scans multiple genes. This permits the artisan to understand and/or discover relationships between multiple genes and different disorders or infections.

In contrast, Modrich begins with a single known gene, rather than a population of multiple genes, and looks for the presence of any mutations in that gene. Although the Examiner acknowledges that Modrich does not take advantage of DNA chip technology, it is argued that the secondary reference, Wodicka, provides this aspect of the claimed invention, namely, to

apply the method of Modrich to a DNA chip to detect mutations in mutations in multiple genes simultaneously. However, this position completely ignores a fundamental defect in Modrich, which is the complete failure to teach the desirability of using its mutation detection method to scan multiple genes. Without such a teaching, there is a complete lack of motivation to combine the references except by impermissible hindsight.

A further fundamental difference between Wodicka and the present invention is that Wodicka does not teach detection of mutations, unlike the present invention. Instead, the DNA chip of Wodicka is primarily directed to analysis of gene expression, and assessing genetic differences between different strains of yeast. The detection of mutations presents a significantly different set of challenges from the analysis of gene expression profiling, as taught in Wodicka. There is nothing in Wodicka that in any way addresses its use to meet this different set of challenges, let alone teaches or suggests the use of its chip technology for mutation detection. Thus, there is no reason to combine the references based upon either reference.

Accordingly, the present invention adopts an entirely different approach from the prior art and permits one to look at complex targets comprising multiple genes for the presence of any mutations.

Claims 5 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Modrich in view of Wodicka, and further in view of Beutler (U.S. 5,255,459).

Applicant respectfully disagrees for the following reasons.

All that Beutler teaches is that mutations can occur in introns. However, this addition in no way cures the underlying defect in the combination of Modrich and Wodicka, for all of the reasons stated above. Accordingly, the combination of references does not render the present invention obvious.

Claims 6 – 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Modrich in view of Wodicka, and further in view of Cronin (WO 98/30883).

Applicant respectfully disagrees for the following reasons.

All that Cronin teaches is that mutations can be searched for and identified in reference sequences, including genes for specific disease conditions. However, for all of the reasons stated above, this addition does nothing to cure the fundamental defect in the combination of Modrich and Wodicka, which do not teach a mutation scanning array when read together. Accordingly, this combination of references does not render the present invention obvious.

Accordingly, applicant respectfully submits that the claims comply with 35 U.S.C. §103(a) and that this rejection of the claims should be withdrawn.

Claims 1 – 13 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 – 30 of U.S. Patent No. 6,174,680.

Applicants are submitting simultaneously herewith a Terminal Disclaimer to obviate the double patenting rejection. Thus, there is co-ownership of the instant application and the '680 patent.

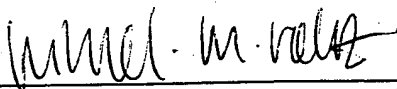
Applicants respectfully submit that the Terminal Disclaimer obviates the double patenting rejection. Accordingly, this rejection of the claims has been overcome.

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In view of the foregoing, applicant respectfully submits that all claims are in condition for allowance. Early and favorable action is requested.

Respectfully submitted,

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